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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,150	12/31/2003	Gary N. Hammond	42P18219	7903

8791 7590 02/06/2008
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EXAMINER

GEIB, BENJAMIN P

ART UNIT	PAPER NUMBER
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2181

MAIL DATE	DELIVERY MODE
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02/06/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/750,150	Applicant(s) HAMMOND ET AL.	
	Examiner Benjamin P. Geib	Art Unit 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/31/2007 has been entered.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 8-12 and 14-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

4. Regarding claims 8-12 and 14-16, the claims recite "A device comprising..." (claim 8), "A system comprising..." (claim 11), and "An apparatus comprising..." (claim 14). The specification indicates that "[t]he system may be implemented in software, for example, in a simulator, emulator, or similar software." (paragraph 36) Therefore, it is understood that the applicant intends for the claimed "device", "system", and "apparatus" to be entirely software. Software per se is not a process, machine, composition of matter, nor manufacture and, therefore, does not fall within any of the categories of patentable subject matter set forth in 35 U.S.C. 101. Therefore, claims 8-12 and 14-16 claim non-statutory subject matter.

5. Regarding claims 17-21, the claims recite a "machine readable storage medium". A "machine readable" medium was defined within the specification as originally filed as "any medium that can store or transfer information. Examples of a machine readable medium include... a radio frequency (RF) link, and similar media and mediums." (paragraph 36) Therefore, it is understood that applicant intends for a "machine readable" medium (and "machine readable" storage medium) to include a signal per se (e.g. radio frequency link). A signal per se is not a process, machine, composition of matter, nor manufacture and, therefore, does not fall

within any of the categories of patentable subject matter set forth in 35 U.S.C. 101. Therefore, claims 17-21 claim non-statutory subject matter. If the applicant does not intend to for the claimed machine readable storage medium to include a signal, then the applicant must make a clear disavowal of intent to claim a signal.

Claim Objections

6. Claims 8, 11, and 17 are objected to because of the following informalities:
 - a. Regarding claims 8 (line 8) and 11 (line 9), the limitation "search of the structure" should be changed to "search of the load structure" to make the claim language consistent;
 - b. Regarding claim 17, at line 8 of the claim, the term "invalidate" should be changed to "invalidates".

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. Claims 1-12 and 14-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
9. Regarding claims 1, 8, 11, 14, 17, and 22, the claims recite the limitation "by a search of the structure to determine whether one of the in program order store instructions allocated within the store queue invalidates the speculative load instruction at the time of retirement" or a similar limitation. This limitation renders the claims indefinite as it is unclear what is meant by "at the time of retirement". A specific "time of retirement" is not previously indicated in the claims and it is unclear as to which retirement time is meant (e.g. a load instruction retirement or a store instruction retirement). It is previously indicated in the claims that a load instruction is "checked at

retirement". Therefore, it appears to the examiner that "at the time of retirement" is further to the same load instruction's retirement and the above-cited limitation will be interpreted as such for the remainder of the examination.

10. Regarding claims 1 (lines 6 and 9), 8 (line 9-10), 11 (line 10-11), 14 (line 7) and 22 (line 12 and 19), the claims recites the limitation "the speculative load instruction". This limitation renders the claims indefinite as there is no previous mention within the claims of a speculative load instruction. However, there is previous mention of a load instruction within the claims. Therefore, the limitation "the speculative load instruction" will be interpreted as "the load instruction" for the remainder of the examination.

11. Regarding claim 2, the claim recites the limitation "at the time of retirement". This limitation renders the claim indefinite for the same reasons as described above for claims 1, 8, 11, 14, 17, and 22 and will be interpreted as "when the load instruction retires" for the remainder of the examination.

Allowable Subject Matter

12. Claims 1-12 and 14-22 appear to be allowable if amended to overcome the 35 U.S.C. 112, second paragraph, and 35 U.S.C. 101 rejections given above.

13. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record including the disclosures of Gharachorloo et al. ("Two Techniques to Enhance the Performance of Memory Consistency Models"), Huck et al. ("Introducing the IA-64 Architecture"), and Yoaz et al. ("Speculation Techniques for Improving Load Related Instruction Scheduling") alone or in combination have not taught or render obvious using a reorder buffer field to indicate that a load instruction is to be checked at retirement by searching a load table to determine whether a store instruction invalidated the load instruction.

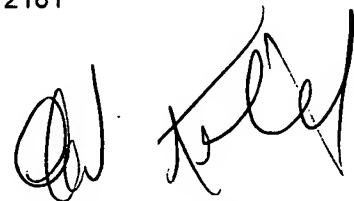
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin P. Geib whose telephone number is (571) 272-8628. The examiner can normally be reached on Mon-Fri 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alford Kindred can be reached on (571) 272-4037. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Benjamin P Geib
Examiner
Art Unit 2181

A handwritten signature in black ink, appearing to read 'Alford Kindred', written over a horizontal line.

**ALFORD KINDRED
SUPERVISORY PATENT EXAMINER**